

## PATENT COOPERATION TREATY

PCT

REC'D 18 JUL 2001

WIPO

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GRC 5196	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/02705	International filing date (day/month/year) 19/07/2000	Priority date (day/month/year) 24/07/1999
International Patent Classification (IPC) or national classification and IPC F16L41/06		
Applicant BG INTELLECTUAL PROPERTY LTD et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 26/02/2001	Date of completion of this report 16.07.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Vecchio, G 

# PATENT COOPERATION TREATY

**PCT**

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

Date of mailing (day/month/year) 05 April 2001 (05.04.01)	
International application No. PCT/GB00/02705	Applicant's or agent's file reference GRC 5196
International filing date (day/month/year) 19 July 2000 (19.07.00)	Priority date (day/month/year) 24 July 1999 (24.07.99)
Applicant JOHNSON, Leigh, Martin et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
26 February 2001 (26.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colmbettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Anman QIU Telephone No.: (41-22) 338.83.38
--	---

# PCT

## NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BURRIDGE, John, R., W.  
Lattice Intellectual Property Ltd.  
23 Buckingham Gate  
London SW1E 6LB  
ROYAUME-UNI

Date of mailing (day/month/year)

27 September 2001 (27.09.01)

Applicant's or agent's file reference.

GRC 5196

International application No.

PCT/GB00/02705

### IMPORTANT NOTIFICATION

International filing date (day/month/year)

19 July 2000 (19.07.00)

1. The following indications appeared on record concerning:

☐

the applicant

☐

the inventor

☒

the agent

☐

the common representative

Name and Address

BURRIDGE, John, R., W.  
BG Intellectual Property Ltd.  
100 Thames Valley Park Drive  
Reading  
Berkshire RG6 1PT  
United Kingdom

State of Nationality

State of Residence

Telephone No.

0118 929 2071

Facsimile No.

0118 929 2192

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐

the person

☐

the name

☒

the address

☐

the nationality

☐

the residence

Name and Address

BURRIDGE, John, R., W.  
Lattice Intellectual Property Ltd.  
23 Buckingham Gate  
London SW1E 6LB  
United Kingdom

State of Nationality

State of Residence

Telephone No.

0207 9636818

Facsimile No.

0207 9636816

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒

the receiving Office

☐

the designated Offices concerned

☐

the International Searching Authority

☒

the elected Offices concerned

☐

the International Preliminary Examining Authority

☐

other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Gen va 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Anman QIU

Telephone No.: (41-22) 338.83.38

**PCT**

**NOTIFICATION OF THE RECORDING  
OF A CHANGE**

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BURRIDGE, John, R., W.  
Lattice Intellectual Property Ltd.  
23 Buckingham Gate  
London SW1E 6LB  
ROYAUME-UNI

Date of mailing (day/month/year)

28 September 2001 (28.09.01)

Applicant's or agent's file reference

GRC 5196

**IMPORTANT NOTIFICATION**

International application No.

PCT/GB00/02705

International filing date (day/month/year)

19 July 2000 (19.07.00)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

BG INTELLECTUAL PROPERTY LTD.  
100 Thames Valley Park Drive  
Reading  
Berkshire RG6 1PT  
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

LATTICE INTELLECTUAL PROPERTY LTD.  
130 Jermyn Street  
London SW1Y 4UR  
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned  
☐ the International Searching Authority ☒ the elected Offices concerned  
☐ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Gen va 20, Switz rland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Anman QIU

Telephone No.: (41-22) 338.83.38

# PATENT COOPERATION TREATY

# PCT

REC'D 18 JUL 2001

WIPO PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GRC 5196	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/02705	International filing date (day/month/year) 19/07/2000	Priority date (day/month/year) 24/07/1999
International Patent Classification (IPC) or national classification and IPC F16L41/06		
Applicant BG INTELLECTUAL PROPERTY LTD et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 6 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 26/02/2001	Date of completion of this report 16.07.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Vecchio, G Telephone No. +49 89 2399 7325 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02705

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
- Description, pages:**

1-11 as originally filed

**Claims, No.:**

1-16 as originally filed

**Drawings, sheets:**

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
  - ☐ the language of publication of the international application (under Rule 48.3(b)).
  - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
  - ☐ filed together with the international application in computer readable form.
  - ☐ furnished subsequently to this Authority in written form.
  - ☐ furnished subsequently to this Authority in computer readable form.
  - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
  - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02705

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 16.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 16 are so unclear that no meaningful opinion could be formed (*specify*):  
**see separate sheet**

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Yes: Claims 1-15

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02705

	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-15
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

## VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**



**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The scope of the protection of claim 16 is completely unclear, it being missing any technical feature, therefore the subject-matter of this dependent claim does not fulfil the requirements of Article 6 PCT in conjunction with Rule 6.3(a) PCT and it cannot be examined.

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Document US-A-5 842 496 is considered as the closest prior art.

The subject-matter of claim 1, the only independent claim, differs from the known method by the steps of "positioning a containment ring on the pipeline at the required position on the pipeline and surrounding the area from which the branch is to extend, positioning an annular seal on the pipeline so that the seal is wholly radially within the containment ring" and of leaving "an annular space between the first and second parts and the external surface of the pipeline" (Article 33(2) PCT).

The distinguishing method steps solve the technical problem of the need of welding for bonding a branch assembly to a pipeline, particularly when "live" pipelines are involved, thereby allowing an easy, reliable and cost-saving method.

Document US-A-5 918 639 shows a solution to the aforementioned technical problem by providing the first and second part of the branch assembly comprising a double layer muff forming an intermediated closed volume, i.e. an annular space, between the layers except that in the area corresponding to the branch. This volume is filled with a hydraulic medium, which compresses the inner layer of the muff against the external surface of the pipeline, thereby

assuring sealing between the pipeline and the branch assembly and leaving an opening for the branch.

This method, which however does not suggest any indication to modify the method disclosed in the closest prior art in order to arrive at the claimed subject-matter, needs also a more expensive construction of the parts of the assembly. Therefore, the subject-matter of independent claim 1 involves an inventive step in the meaning of Article 33(3) PCT.

Claims 2-15 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step (Article 33(2)(3) PCT).

The industrial applicability of the invention is clearly given in the description according to Article 33(4) PCT.

#### **Re Item VII**

##### **Certain defects in the international application**

A document reflecting the prior art described on page 1, second paragraph, is not identified in the description (Rule 5.1(a)(ii) PCT).

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

The formulation of claim 6 is such that said claim would depend on itself, whereas it is obvious that it depends on claim 5 (Article 6 PCT).

According to the requirements of Rule 11.13(m) PCT the same feature shall be denoted by the same reference sign throughout the application. Therefore, on page 6, lines 2 and 3, the first part, which according to claim 2 forms the lower part, should be denoted by reference sign 3 and the second part, which according to claim 2 forms the upper part, should be identified by reference sign 2. The same apply to the end of the third paragraph on page 6.

# PATENT COOPERATION TREATY

PCT/GB00/02705

File: 5196 WO

From the INTERNATIONAL BUREAU

PCT

## NOTIFICATION CONCERNING SUBMISSION OR TRANSMITTAL OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

BURRIDGE, John, R., W.  
BG Intellectual Property Ltd.  
100 Thames Valley Park Drive  
Reading  
Berkshire RG6 1PT  
ROYAUME-UNI

Date of mailing (day/month/year) 22 November 2000 (22.11.00)	
Applicant's or agent's file reference GRC 5196	<b>IMPORTANT NOTIFICATION</b>
International application No. PCT/GB00/02705	International filing date (day/month/year) 19 July 2000 (19.07.00)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 24 July 1999 (24.07.99)
Applicant BG INTELLECTUAL PROPERTY LTD. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
24 July 1999 (24.07.99)	9917360.1	GB	18 Augu 2000 (18.08.00)
28 Apr 2000 (28.04.00)	0010328.3	GB	18 Augu 2000 (18.08.00)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

C. Villet

Telephone No. (41-22) 338.83.38

# PATENT COOPERATION TREATY

5196 WO  
WO 01/07820  
PCT/GB00/02705

*Sealed*

PCT

From the INTERNATIONAL BUREAU *file*

## NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

BURRIDGE, John, R., W.  
BG Intellectual Property Ltd.  
100 Thames Valley Park Drive  
Reading  
Berkshire RG6 1PT  
ROYAUME-UNI

Date of mailing (day/month/year) 01 February 2001 (01.02.01)		IMPORTANT NOTICE	
Applicant's or agent's file reference GRC 5196			
International application No. PCT/GB00/02705	International filing date (day/month/year) 19 July 2000 (19.07.00)	Priority date (day/month/year) 24 July 1999 (24.07.99)	
Applicant BG INTELLECTUAL PROPERTY LTD. et al			

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AU,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

BR,CA,CN,CZ,EP,ID,IL,JP,MX,NO,PL,RU,SG,TT

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 01 February 2001 (01.02.01) under No. WO 01/07820

### REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

### REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>GRC 5196</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/02705</b>	International filing date (day/month/year) <b>19/07/2000</b>	(Earliest) Priority Date (day/month/year) <b>24/07/1999</b>
Applicant  <b>BG INTELLECTUAL PROPERTY LTD</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

### 1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

3

☐ None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/02705

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F16L41/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 842 496 A (MACFARLANE TREVOR ET AL) 1 December 1998 (1998-12-01) column 1, line 62 -column 2, line 22; figures 1,4	1,2,4,16
A	US 5 918 639 A (KNUTSEN HANS ET AL) 6 July 1999 (1999-07-06) column 2, line 41 -column 4, line 3; figure 1	1,2,4,16
A	US 4 050 720 A (RENEAU BOBBY J) 27 September 1977 (1977-09-27) column 3, line 3 -column 4, line 10; figures 4,5	1-3,5,6
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

29 September 2000

Date of mailing of the international search report

10/10/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Axelsson, T

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/02705

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 3 292 954 A (COREY W S)  20 December 1966 (1966-12-20)  column 2, line 42 - line 45  column 3, line 22 - line 35; figure 4</p>	1-3, 5

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/02705

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5842496	A	01-12-1998	CA	2194198 A	30-06-1998
US 5918639	A	06-07-1999	BR	9407870 A	29-10-1996
			DE	69419769 D	02-09-1999
			DE	69419769 T	02-12-1999
			EP	0724695 A	07-08-1996
			ES	2136747 T	01-12-1999
			NO	961538 A	18-04-1996
			WO	9511397 A	27-04-1995
US 4050720	A	27-09-1977	NONE		
US 3292954	A	20-12-1966	NONE		



## CLAIMS

1. A method for securing a shell assembly to a pipeline, wherein the shell assembly comprises a first part for locating on the side of the pipeline removed from a side which is damaged or from which a branch is to extend, and a second part, optionally incorporating a branch, for locating on the side that is damaged or from which the branch is to extend, the method comprising positioning a containment ring on the pipeline at the required position on the pipeline and surrounding the damaged area or the area from which the branch is to extend, positioning an annular seal on the pipeline so that the seal is wholly radially within the containment ring, positioning the second part of the shell assembly onto the seal, positioning the first part of the assembly on the pipe line and securing the first and second parts together so as to compress the seal and leave an annular space between the first and second parts and the external surface of the pipeline, providing sealing means for substantially preventing fluid from escaping from the annular space, wherein the upper and lower sides of the containment ring are each provided with an annular groove, with the annular

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Related Pending Application
Related Case Serial No: <u>10/258,529</u>
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grooves being connected to each other by a plurality of passages extending through the ring from one groove to the other, and introducing sealant via a hole provided or made in the wall of the assembly, into the upper groove to fill the lower groove, the passages and the upper groove to provide sealing between the containment ring and the pipeline, and between the containment ring and the assembly.

2. A method as claimed in claim 1, wherein the first part forms the lower part of the assembly and the second part forms the upper part of the assembly.
3. A method as claimed in claim 1 or 2, wherein the annular seal is made of rubber or of a polymer and metal composite.
4. A method as claimed in any of the preceding claims, wherein grout is introduced into the annular space between the first and second parts and the external surface of the pipeline.
5. A method as claimed in any of the preceding claims, wherein jacking means are employed to space the first part from the pipeline when the first and second parts have been secured together on the pipeline.

6. A method as claimed in claim 1 and substantially as hereinbefore described with reference to Figures 1, 2, 2a, 2b, 2c, 3 and 4 or Figures 1, 2, 2a, 2b, 2c, 3 and 4 as modified by Figure 5 of the accompanying drawings.

## Abstract

A method is provided for securing a shell assembly to a pipeline. A two part shell assembly (2, 3) is secured to pipeline (6) and holds in position an annular sealing arrangement (16, 17) located about a predetermined area of the outer surface of the pipeline. The sealing arrangement includes a containment ring (16) surrounding an annular seal (17). The containment ring is provided with connected through passages (16e) so that sealant can be introduced via a hole in the assembly into the passages to provide sealing between the ring and the pipeline, and between the ring and the assembly. Thus, should the annular seal (17) fail during service the introduced sealant provides a seal.

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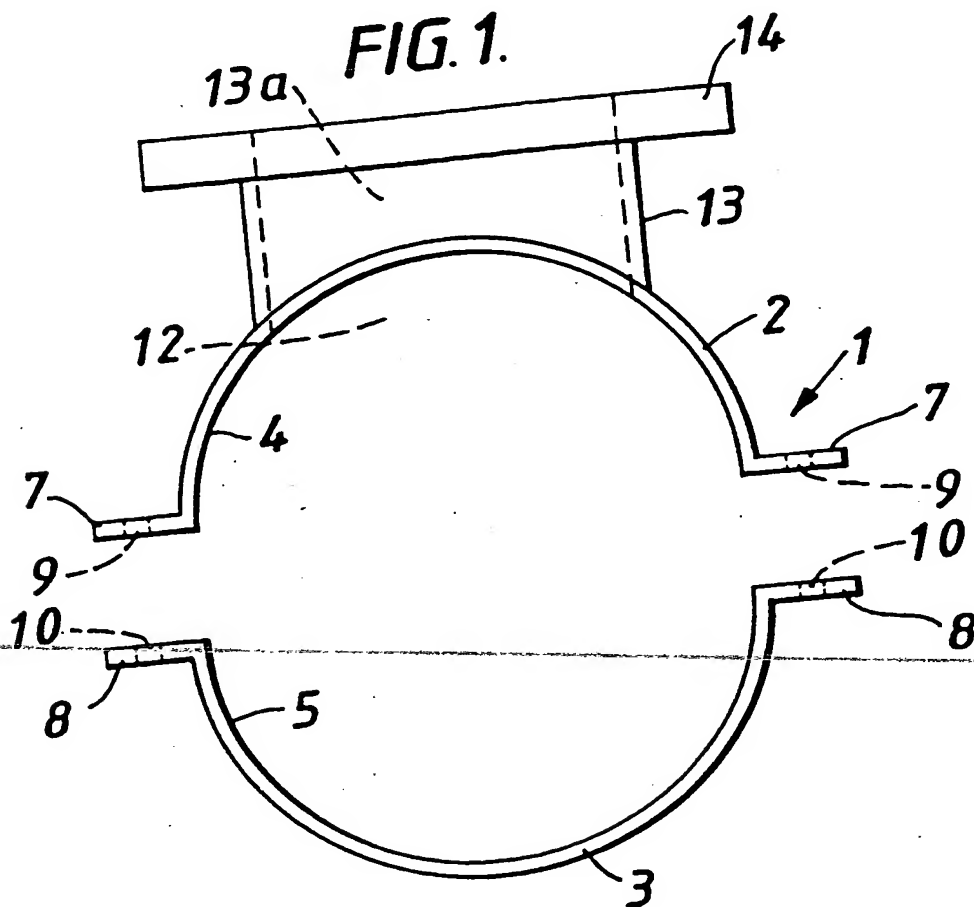


FIG. 2. 2/5

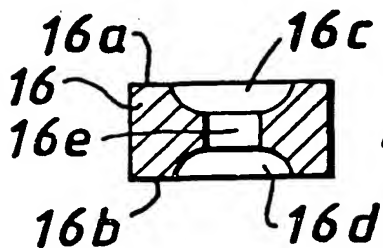
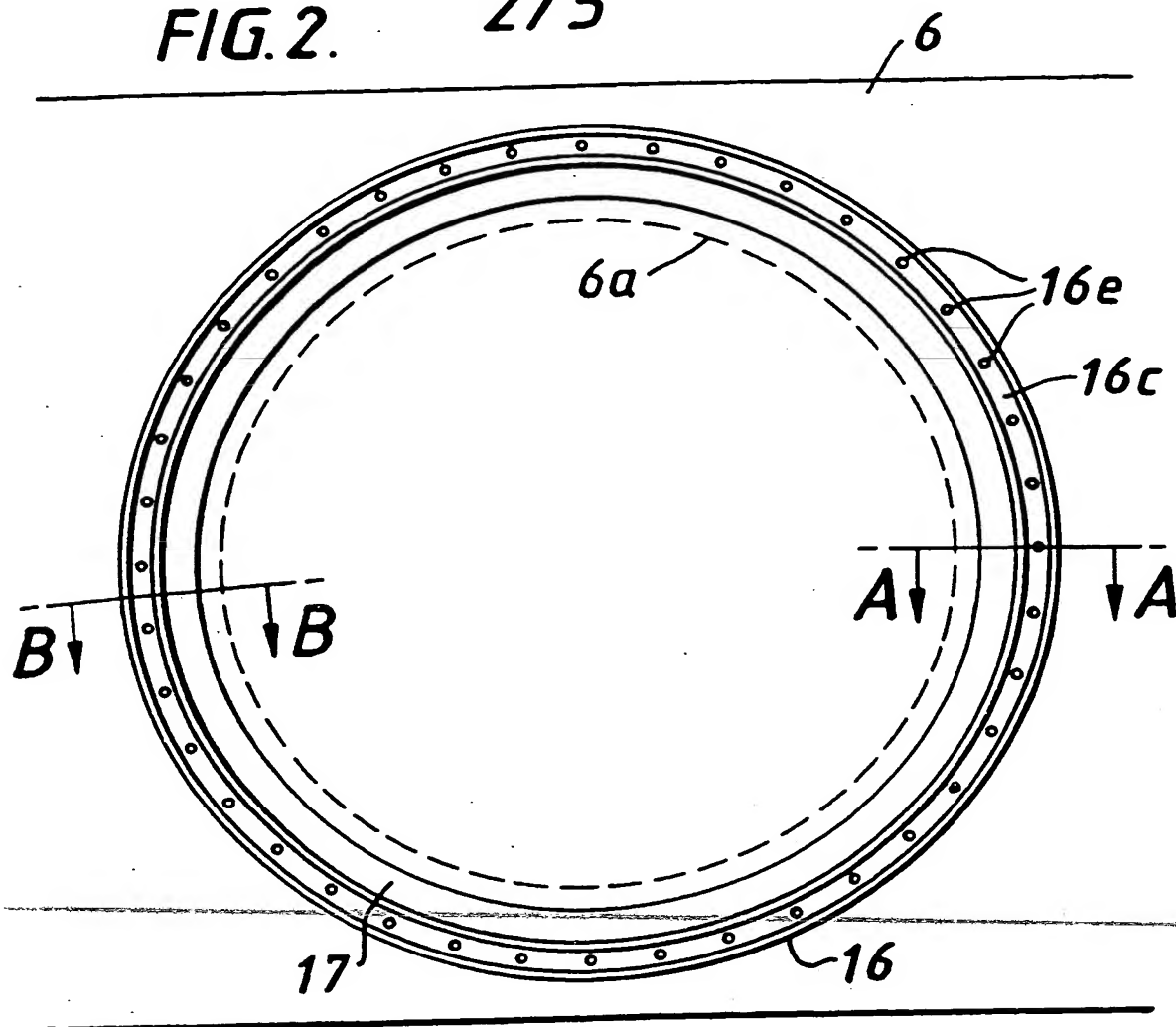


FIG. 2a.

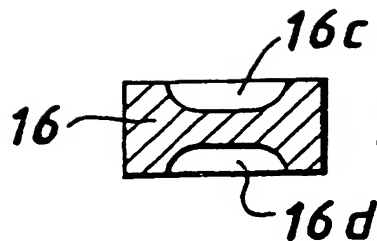


FIG. 2b.

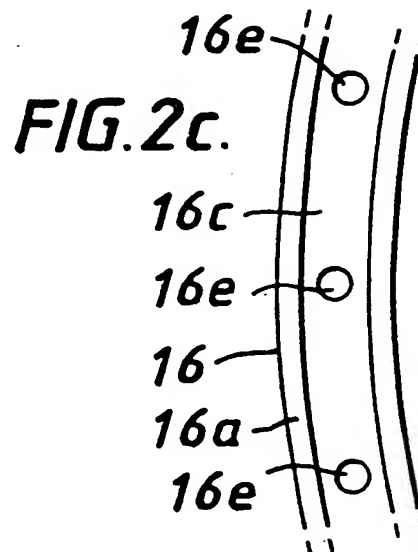
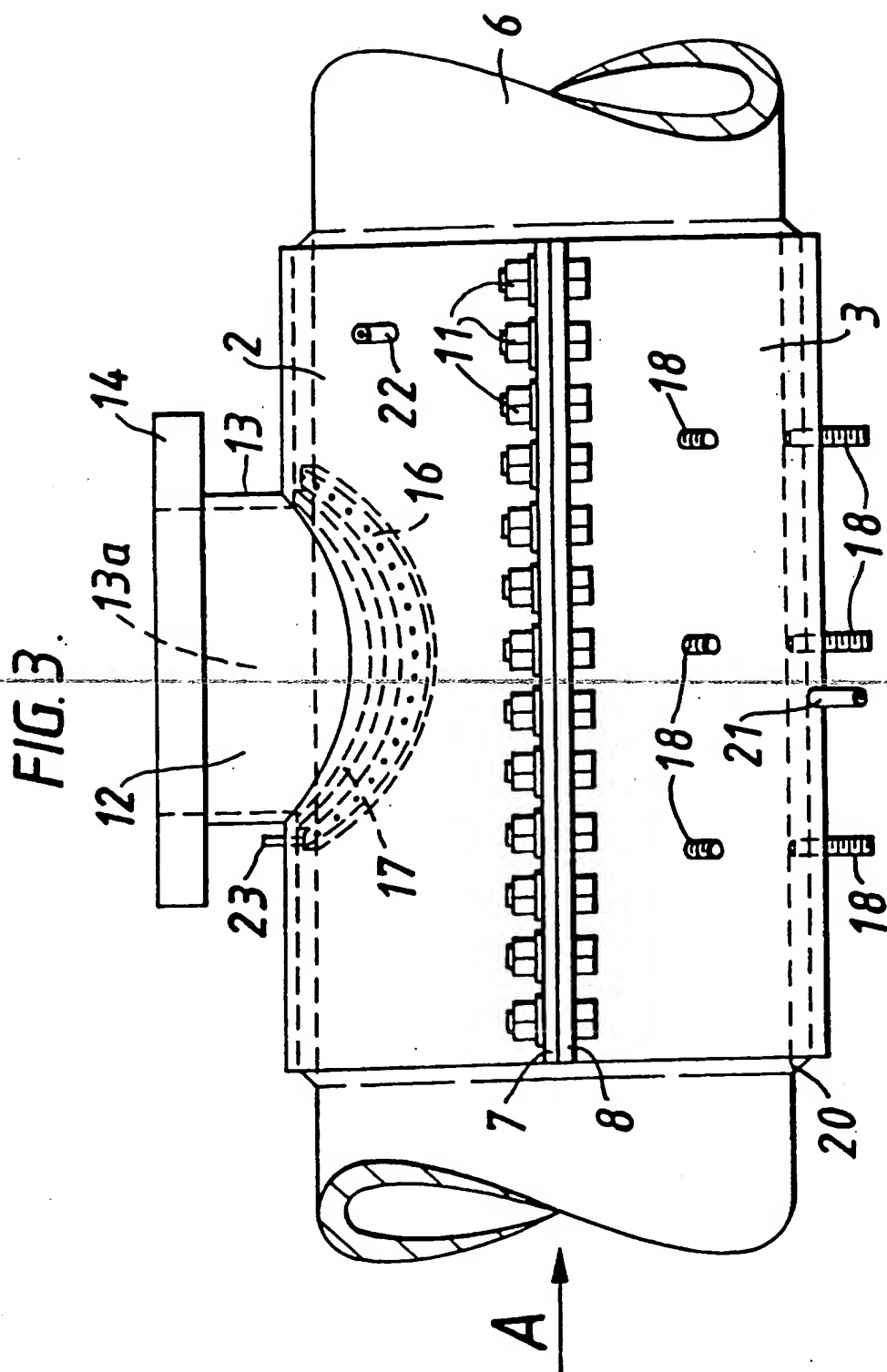


FIG. 2c.

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FIG. 4.

